IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An image processing apparatus for compressing an input image using a motion vector, the image processing apparatus comprising:

means for storing position information of each pixel of a first frame that is earlier in time than a second frame at an address corresponding to a feature value (f) that is based on a value of said each pixel and pixels ~~a pixel~~ peripheral to said each pixel, the feature value representing a feature of said each pixel and defined as

$$f(L_{i-1,j-1}, L_{i-1,j}, L_{i-1,j-1}, L_{i,j-1}, L_{i,j}, L_{i,j+1}, L_{i+1,j-1}, L_{i+1,j}, L_{i+1,j+1}),$$

where i indicates a vertical direction, j indicates a horizontal direction, and $L_{i,j}$ indicates a pixel value of a position (i, j);

first means for detecting the position information stored at an address corresponding to a feature value that is based on a value of the target pixel of which a motion vector is to be determined or a pixel peripheral to said target pixel of the second frame, the feature value representing said feature of said target pixel;

means for determining a centroid of candidate pixels of the first frame which are identified with the position information detected by the first means for detecting; and

second means for detecting a motion vector of the target pixel from the position of the target pixel and the centroid.

2. (Currently Amended) An image processing method for an image processing apparatus that compresses an input image using a motion vector, the method comprising:

storing position information of each pixel of a first frame that is earlier in time than a second frame at an address corresponding to a feature value (f) that is based on a value of said

each pixel and <u>pixels</u> ~~a pixel~~ peripheral to said each pixel, the feature value representing a feature of said each pixel <u>and defined as</u>

$$f(L_{i-1,j-1}, L_{i-1,j}, L_{i-1,j-1}, L_{i,j-1}, L_{i,j}, L_{i,j+1}, L_{i+1,j-1}, L_{i+1,j}, L_{i+1,j+1}),$$

where *i* indicates a vertical direction, *j* indicates a horizontal direction, and $L_{i,j}$ indicates a pixel value of a position (i, j);

detecting the position information stored at an address corresponding to a feature value that is based on a value of a target pixel of which a motion vector is to be determined or a pixel peripheral to said target pixel of the second frame, the feature value representing said feature value of said target pixel;

determining a centroid of candidate pixels of the first frame which are identified with the position information detected; and

detecting a motion vector of the target pixel from the position of the target pixel and the centroid.

3. (Currently Amended) A computer readable medium having stored thereon a computer-readable program which causes a computer to execute a method for compressing an input image using a motion vector is recorded, comprising:

controlling storage of position information of each pixel of a first frame that is earlier in time than a second frame at an address corresponding to a feature value (f) that is based on a value of said each pixel and <u>pixels</u> ~~a pixel~~ peripheral to said each pixel, the feature value representing a feature of said each pixel <u>and defined as</u>

$$f(L_{i-1,j-1}, L_{i-1,j}, L_{i-1,j-1}, L_{i,j-1}, L_{i,j}, L_{i,j+1}, L_{i+1,j-1}, L_{i+1,j}, L_{i+1,j+1}),$$

where *i* indicates a vertical direction, *j* indicates a horizontal direction, and $L_{i,j}$ indicates a pixel value of a position (i, j);

controlling detection of the position information stored at an address corresponding to a feature value that is based on a value of a target pixel of which a motion vector is to be determined or a pixel peripheral to said target pixel of the second frame, the feature value representing said feature value of said target pixel;

controlling determination of a centroid of candidate pixels of the first frame which are identified with the position information detected; and

controlling step of controlling detection of a motion vector of the target pixel from the position of the target pixel and the centroid.

4-14. (Canceled)

15. (Currently Amended) An image processing apparatus for compressing an input image using a motion vector, the image processing apparatus comprising:

a memory configured to store position information of each pixel of a first frame that is earlier in time than a second frame at an address corresponding to a feature value (*f*) that is based on a value of said each pixel and pixels ~~a pixel~~ peripheral to said each pixel, the feature value representing a feature of said each pixel and defined as

$$f(L_{i-1,j-1}, L_{i-1,j}, L_{i-1,j-1}, L_{i,j-1}, L_{i,j}, L_{i,j+1}, L_{i+1,j-1}, L_{i+1,j}, L_{i+1,j+1}),$$

where *i* indicates a vertical direction, *j* indicates a horizontal direction, and $L_{i,j}$ indicates a pixel value of a position (*i, j*);

a motion vector detector configured to detect the position information stored at an address corresponding to a feature value that is based on a value of the target pixel of which a motion vector is to be determined or a pixel peripheral to said target pixel of the second frame, the feature value representing said feature of said target pixel;

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the motion vector detector configured to determine a centroid of candidate pixels of

the first frame which are identified with the detected position information; and

the motion vector detector configured to detecting a motion vector of the target pixel

from the position of the target pixel and the centroid.